



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,489	09/02/2004	Toru Uda	121036-0069	1575
<div>7590 Michael S Gzybowski Butzel Long Suite 300 350 South Main Street Ann Arbor, MI 48104</div>			<div>EXAMINER KUHN, ALLAN R</div>	
			<div>ART UNIT 1732</div>	<div>PAPER NUMBER</div>
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/18/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/506,489

Applicant(s)

UDA, TORU

Examiner

Allan Kuhns

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-11 and 13-16 is/are rejected.
- 7) ☒ Claim(s) 2 and 12 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date, ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>090204</u> . | 6) <input type="checkbox"/> Other: ____. |

Art Unit: 1732

1. Claims 3, 8, 11 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 3 and 11 are indefinite because there is no basis provided for the molecular weight range recited (e.g. weight average or number average). Claims 8 and 14 are indefinite because "the wet heat treatment" lacks antecedent basis within the claims. Clarification is required.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4-10 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese reference (2001-286743) in view of Japanese reference (10-052631) in view of Kozawa et al. (6,355,730). The '743 reference discloses or suggests the basic claimed process for producing a polymetaphenylene isophthalamide membrane which includes extruding a film forming solution comprising polymetaphenylene isophthalamide and an inorganic salt while keeping the film-forming solution at 70 °C or higher. The '743 reference appears not to teach the presence of polyvinyl pyrrolidone in the solution, but such is taught or suggested by the '631 reference. It would have been obvious to one of ordinary skill in the art to incorporate polyvinyl pyrrolidone into the membrane forming solution of the '743 reference since the '631 reference recommends the presence of a water soluble polymer. The '631 reference teaches the formation of a hollow fiber membrane and the conduct of dry and

Art Unit: 1732

wet spinning. Based on the abstracts only of the Japanese references, neither reference teaches the aspect of a moisture retention treatment, but such is taught by Kozawa et al. at column 5, lines 23-26. It would have been obvious to one of ordinary skill in the art to incorporate a moisture retention treatment, as taught by Kozawa et al., into the method of the Japanese reference since such treatment is conventional. Based on the desired hollow shape, it would have been obvious to one of ordinary skill in the art to use an annular spinning nozzle, as in claim 1.

Use of calcium chloride salt, as in claim 4 is well known (note column 4, lines 12-19 of Hoehn et al. (3,899,309), now cited of interest) and would have been obvious to one of ordinary skill in the art in order to assist in membrane formation. The '743 reference suggests the use of temperatures, as in claims 5 and 6. The prior art teaches a membrane, as in claims 7 and 13. Forming a membrane with the characteristics of claims 8-10 and 14-16 is well known and would have been obvious to one of ordinary skill in the art based on the conventional nature of treatment required to achieve those characteristics. The aspect, in claims 10 and 16, that the membrane is used in a fuel cell is essentially a statement of an intended use of the membrane but does not in and of itself affect the claimed membrane structure or constituents.

4.Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5.Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Kuhns whose telephone number is (571) 272-

Art Unit: 1732

1202. The examiner can normally be reached on Monday to Thursday from 7:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson, can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Allen R. Kuhns

ALLAN R. KUHNS
PRIMARY EXAMINER AU 1732

1-10-07